Deutsches Institut für Bautechnik

Public-law institution jointly founded by the federal states and the Federation

European Technical Assessment Body for construction products

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Designated according to Article 29 of Regulation (EU) No 305/2011 and member of EOTA (European Organisation for Technical Assessment)

European Technical Assessment ETA-23/0764 of 12 December 2023

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the European Technical Assessment:	Deutsches Institut für Bautechnik
Trade name of the construction product	Wego Power Ceiling anchor
Product family to which the construction product belongs	Fasteners for use in concrete for redundant non-structural systems
Manufacturer	WeGo Systembaustoffe GmbH Maybachstraße 14 63456 Hanau
Manufacturing plant	Wego Systembaustoffe
This European Technical Assessment contains	8 pages including 3 annexes which form an integral part of this assessment
This European Technical Assessment is issued in accordance with Regulation (EU) No 305/2011, on the basis of	330747-00-0601, Edition 06/2018

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Specific Part

1 Technical description of the product

The Wego Power Ceiling Anchor is an anchor made of galvanized steel which is placed into a drilled hole and anchored by deformation-controlled expansion.

The product description is given in Annex A.

2 Specification of the intended use in accordance with the applicable European Assessment Document

The performances given in Section 3 are only valid if the anchor is used in compliance with the specifications and conditions given in Annex B.

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the anchor of at least 50 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

3 Performance of the product and references to the methods used for its assessment

3.1 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Class A1
Resistance to fire	See Annex C 1

3.2 Safety and accessibility in use (BWR 4)

Essential characteristic	Performance
Characteristic resistance for all load directions and modes of failure for simplified design	See Annex C 1
Durability	See Annex B 1

4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with European Assessment Document EAD No. 330747-00-0601, the applicable European legal act is: [97/161/EC].

The system to be applied is: 2+

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable European Assessment Document

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

Issued in Berlin on 12 December 2023 by Deutsches Institut für Bautechnik

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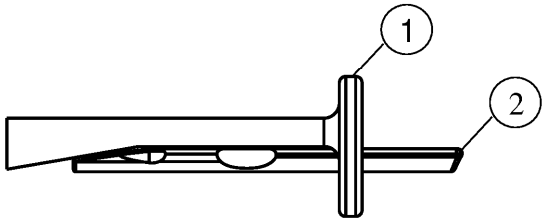
Head of Section

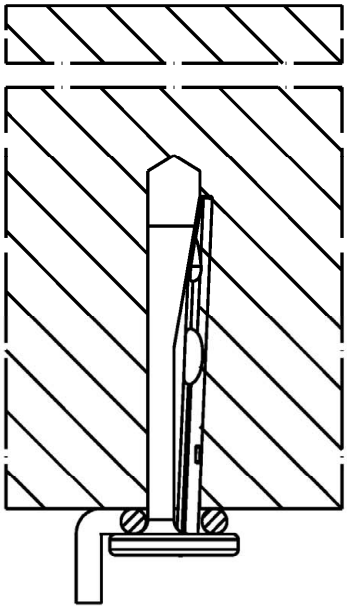
beglaubigt:
Baderschneider

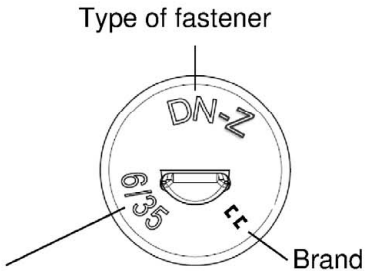
Deutsches Institut für Bautechnik DIBt

Product installation conditions, product marking and product dimensions



① Shaft
② Pin

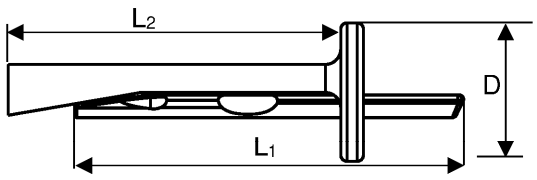




Nominal diameter / max. thickness of the fixture

Table A1.1: Dimensions

Size				Wego Power Ceiling Anchor	
				6/5	**6/35**
Length of the	pin	L_1	[mm]	43	73
	shaft	L_2		37,5	67,5
Diameter of the head		D	≥	13	



(Fig. not to scale)

Wego Power Ceiling Anchor

Product description

Product installation conditions, product marking and product dimensions

Annex A 1

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Specifications of intended use

Anchorages subject to:

Size	**Wego Power Ceiling Anchor 6**
Static and quasi-static loads	✓
Only for use in concrete for redundant non-structural systems	
Fire exposure	

Base materials:

- Compacted reinforced and unreinforced normal weight concrete without fibres according to EN 206:2013
- Strength classes C12/15 to C50/60 according to EN 206:2013
- Cracked and non-cracked concrete

Use conditions (Environmental conditions):

- Anchorage subject to dry internal conditions

Design:

- Anchorages are designed under the responsibility of an engineer experienced in anchorages and concrete work
- Verifiable calculation notes and drawings have to be prepared taking account of the loads to be anchored. The position of the anchor is indicated on the design drawings (e.g. position of the anchor relative to reinforcement or to supports, etc.).
- Design of fastenings according to EN 1992-4:2018, Design Method B and Technical Report TR 055:2018

Wego Power Ceiling Anchor	**Annex B 1**
Intended use Specifications	

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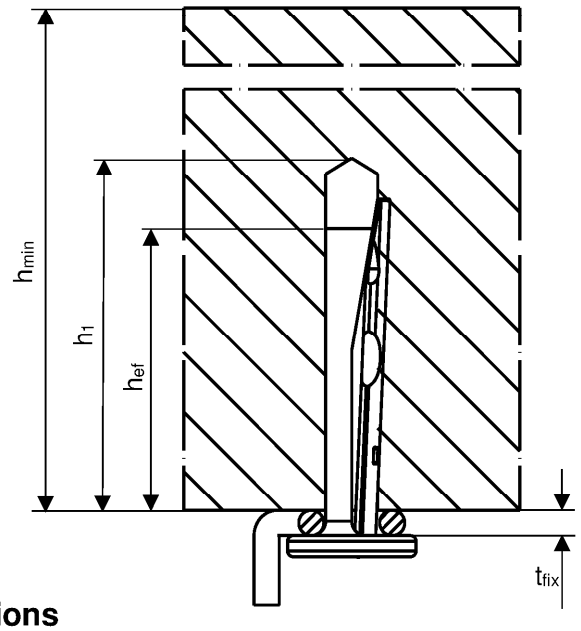
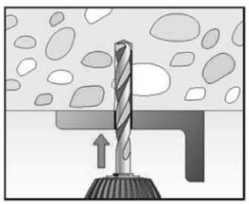
Table B2.1: Installation parameters

Size					Wego Power Ceiling Anchor 6/5	Wego Power Ceiling Anchor 6/35
Thickness of the fixture		t_{fix}	≤	[mm]	5	35
Nominal drill hole diameter		d_0			6	
Diameter of clearance hole in the fixture		d_f	≤		7	
Maximum bit diameter		$d_{cut,max}$			6,40	
Effective embedment depth		h_{ef}			32	
Depth of drill hole to deepest point	with hole cleaning	h_1	≥		37	
	without hole cleaning				42	
Minimum thickness of concrete member		h_{min}			80	

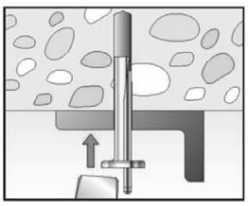


Installation instructions

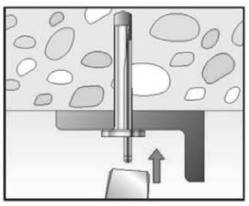
- Hammer or hollow drilling only
- Anchor installation carried out by appropriately qualified personnel and under the supervision of the person responsible for technical matters of the site
- Positioning of the drill holes without damaging the reinforcement
- In case of aborted hole: New drilling at a minimum distance twice the depth of aborted hole away of or smaller distance if the aborted hole is filled with high strength mortar and if under shear or oblique tension load it is not in the direction of the load application



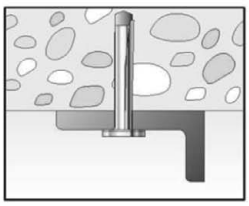
1: Drill the hole



2: Set the fastener



3: Set the pin, until flush to the surface



4: Installed fastener

(Fig. not to scale)

Wego Power Ceiling Anchor

Intended use

Installation parameters and installation instructions

Annex B 2

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Table C1.1: Characteristic resistance

Size				Wego Power Ceiling Anchor 6
For all load directions and for all failures modes				
Effective embedment depth		h_{ef}	[mm]	32
Characteristic resistance in cracked and non-cracked concrete	C12/15	F^0_{Rk}	[kN]	1,5
	C20/25 to C50/60			2,0
Characteristic edge distance		$c_{cr,N} = c_{min}$	[mm]	60
Characteristic spacing		$s_{cr,N} = s_{min}$	[mm]	50
Partial factor		γ_M	[-]	1,5
Installation factor		γ_{inst}	[-]	1,0
Shear load with lever arm				
Characteristic bending resistance		$M^0_{Rk,s}$	[Nm]	4,4
Partial factor for steel failure		γ_{Ms} [1)]	[-]	1,25

[1)] In absence of other national regulations

Table C1.2: Characteristic resistance under fire exposure for all effective embedment depths

Size				Wego Power Ceiling Anchor 6
Steel failure for tension and shear load				
R30	Characteristic resistance without lever arm	$F_{Rk,s,fi30}$ [1)]	[kN]	1,00
R60		$F_{Rk,s,fi60}$ [1)]		0,50
R90		$F_{Rk,s,fi90}$ [1)]		0,34
R120		$F_{Rk,s,fi120}$ [1)]		0,26
R30 – R120	Characteristic resistance with lever arm	$M^0_{Rk,s,fi}$	[Nm]	No performance assessed
Spacing and edge distance				
R30 – R120		$s_{cr,fi}$	[mm]	200
		$c_{cr,fi}$		150

[1)] $N_{Rk,s,fi} = N_{Rk,p,fi} = V_{Rk,s,fi} = F_{Rk,s,fi}$

For fire exposure from more than one side $c_{min} \geq 300$ mm

Wego Power Ceiling Anchor	**Annex C 1**
Performances Characteristic resistance and characteristic resistance under fire exposure	